



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**D3108-1**  
**Job Sheet 169977**



SO 30826

Part No: D3108-1

Job Qty: 10 ea

Part Name: Decal



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/5/18

Job Tracking No:

Due Date: 1/18/18

Created By: Mario Poulin

Type: Stock

Description:

Customer: Bell Helicopter Textron Inc (CEDWA01)

Attn: Bell Piney Flats PO Box 77045 Fort Worth, TX, 76177 USA ph:817-837-4700 fx:866-668-4852.

Note: DWG REV B1 IPP B 02.04.22 Added Rev.B NG

Ship Via:

### Bill of Materials

### Job Routing

| Op No | Operation  | Qty    | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off    |
|-------|------------|--------|------------|----------|-----------|---------|-----------------------|-----------|-------------|
|       |            |        |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time |             |
| 100   | Purchasing | 10 pcs |            | 1/18/18  | 0.00      | 0.00    | Purchasing            |           | SD 18-01-10 |
| 110   | Packaging  | 10 pcs |            | 1/18/18  | 0.00      | 0.00    | Packaging2            |           | SD 18-01-10 |
| 120   | QC         | 10 pcs |            | 1/18/18  | 0.00      | 0.00    | QC6                   |           | 38          |
| 130   | Packaging  | 10 pcs |            | 1/18/18  | 0.00      | 0.00    | Packaging3-1          | 57017     | AT 18-01-10 |
| 140   | QC21-SA    | 10 Ea  |            | 1/18/18  | 0.00      | 0.00    | QC21                  |           |             |

Part Op 110 - Receive & Inspect for Damage & Mat'l Certs  
Descriptions: 120 - QC6- All purchased or subcontracted products  
130 - Identify as per dwg & Stock Location:  
140 - QC21- Final Inspection - Work Order Release

PO 035736

JAN 05 2017

19-01-10

### Job Allocations

| Operation      | Component Part | Required | Inventory | Allocated | Std Qty |
|----------------|----------------|----------|-----------|-----------|---------|
| 100-Purchasing | D3108-1P       | 10       | 0         | 0         | 0       |

### Part Specifications

Specifications could not be found.

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

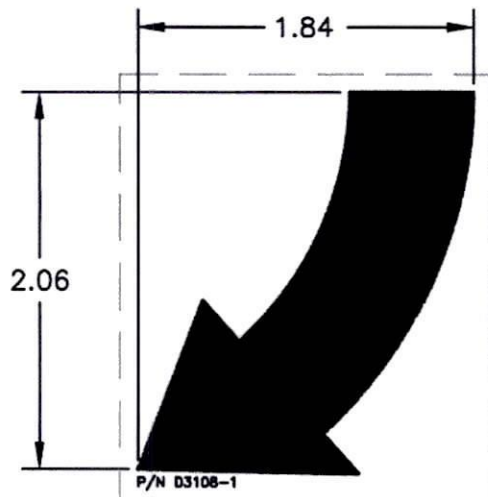
QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

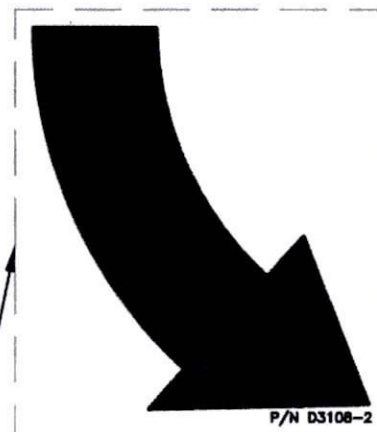
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Step #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MRB (QSI042) Approval                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Completed By                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Lead hand / Supervisor Approval Verification                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | QC / QA Coordinator Approval                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Root Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Misabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/> |
| OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**DART**

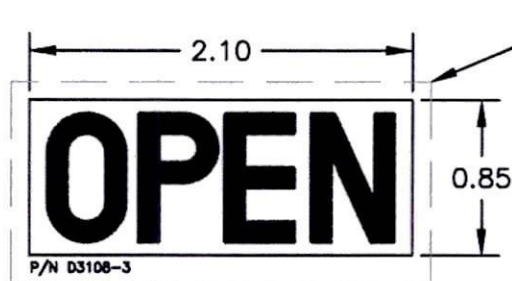
|                  |                |                                                   |                        |
|------------------|----------------|---------------------------------------------------|------------------------|
| DESIGN<br>RF     | DRAWN BY<br>RF | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA |                        |
| CHECKED<br>#     | APPROVED<br>#  | DRAWING NO.<br>D3108                              | REV. B<br>SHEET 1 OF 2 |
| DATE<br>02.04.01 | TITLE<br>DECAL |                                                   | SCALE<br>1:1           |
| A                | 02.04.01       | NEW ISSUE                                         |                        |
| B                | 02.04.17       | ADD -7/-9; ADD TRIM LINES                         |                        |
| B1               | 04.05.11       | CHANGE MATERIAL ON D3108-9                        |                        |

RELEASED  
02.04.22

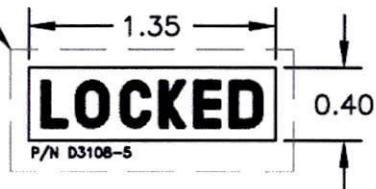
D3108-1  
(REPLACES BHT P/N 31-057-3EH)



D3108-2  
(REPLACES BHT P/N 31-057-4EH)



D3108-3  
(REPLACES BHT P/N 31-042-7BHF)

TRIM  
LINE

D3108-5  
(REPLACES BHT P/N 31-042-13DHF)

**NOTES:**

MATERIAL: BLACK LETTER ON WHITE ADHESIVE BACK  
MANUFACTURED FROM 3M 7 MIL MASKING FILM  
#8522CP OR AVERY IPM #2031

TOLERANCES ARE PER QSI 018 UNLESS OTHERWISE NOTED  
ALL DIMENSIONS ARE IN INCHES

Copyright © 2002 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.





Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER

## PO038736

**Supplier:** STU002-VC  
Studio de Lettrage 2001  
210 Main West  
Hawkesbury  
ON  
K6A 2H6 Canada  
Phone: 613 632 5449  
Fax: 613 632 9491

**Attention:** Grace, Batista

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**PO No:** PO038736  
**PO Date:** 1/5/18  
**Due Date:** 1/12/18  
**Purchase Order**  
**Revision:**  
**Revision Date:**  
**Ship-To Contact:** Phone:

**Via:** Ground  
**Pynt Terms:** Net 30  
**Freight Terms:**  
**Special Comments:**

E-MAILED  
JAN 08 2018

| Items                      |          |                  |         |                                       |        |          |                |                   |         |                  |                |
|----------------------------|----------|------------------|---------|---------------------------------------|--------|----------|----------------|-------------------|---------|------------------|----------------|
| Line Item                  | Part     | Supplier Part No | Item No | Description                           | Status | Due Date | Order Quantity | Received Quantity | Balance | Unit Price (CAD) | Extended Price |
| 1                          | D3108-1P |                  |         | Decal<br>As per Dwg D3108<br>Rev. B   | Firmed | 1/12/18  | 10 pcs         | 0 pcs             | 10 pcs  | \$13.3333/pcs    | \$133.33       |
| Line Item Note job# 169977 |          |                  |         |                                       |        |          |                |                   |         |                  |                |
| 2                          | D3108-3P |                  |         | Decal<br>As per Dwg D3108<br>Rev. B   | Firmed | 1/12/18  | 10 pcs         | 0 pcs             | 10 pcs  | \$13.3333/pcs    | \$133.33       |
| Line Item Note job# 169978 |          |                  |         |                                       |        |          |                |                   |         |                  |                |
| 3                          | D3108-5P |                  |         | Decal<br>As Per Dwg D3108<br>Rev. B   | Firmed | 1/12/18  | 10 pcs         | 0 pcs             | 10 pcs  | \$13.3333/pcs    | \$133.33       |
| Line Item Note job# 169979 |          |                  |         |                                       |        |          |                |                   |         |                  |                |
| 4                          | D4384-1P |                  |         | Placard<br>As Per Dwg D4384<br>Rev. A | Firmed | 1/12/18  | 10 pcs         | 0 pcs             | 10 pcs  | \$13.3333/pcs    | \$133.33       |
| Line Item Note job# 169989 |          |                  |         |                                       |        |          |                |                   |         |                  |                |
| Grand Total:               |          |                  |         |                                       |        |          |                |                   |         |                  | \$533.33       |

### Order Notes

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

Procurement Quality Clauses  
A005 RIGHT OF ENTRY  
A007 FIRST ARTICLE INSPECTION (FAI) BY SELLER. (DOCUMENTATION MAINTAINED BY SUPPLIER)  
A012 CHEMICAL AND PHYSICAL TEST REPORTS  
A016 PERSONNEL QUALIFICATION  
A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE)  
A026 CERTIFICATION OF MATERIAL CONFORMANCE  
A041 QUALITY MANAGEMENT SYSTEM  
A042 DART NOTIFICATION BY SUPPLIER  
A043 RETENTION OF QUALITY DOCUMENT  
  
A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM  
A049 SUPPLIER AWARENESS

210 Main West  
Hawkesbury, Ontario K6A 2H6  
Canada

## INVOICE

Invoice No.: 45522  
Date: 01/09/2018  
Ship Date:  
Page: 1  
Re: Order No.

**Sold to:**

Dart Aerospace Ltd  
  
1270 Aberdeen  
Hawkesbury, Ontario  
K6A 1K7

**Ship to:**

Dart Aerospace Ltd  
  
1270 Aberdeen  
Hawkesbury, Ontario  
K6A 1K7

| Quantity                                                       | Description       | Base Price | Disc. % | Unit Price | Amount |
|----------------------------------------------------------------|-------------------|------------|---------|------------|--------|
| 10                                                             | D3108-1P.         | 13.333     |         | 13.333     | 133.33 |
| 10                                                             | D3108-3P.         | 13.333     |         | 13.333     | 133.33 |
| 10                                                             | D3108-5P.         | 13.333     |         | 13.333     | 133.33 |
| 10                                                             | D4384-1P.         | 13.333     |         | 13.333     | 133.33 |
|                                                                | PO# 038736        |            |         |            |        |
|                                                                | Attn: Diane Baker |            |         |            |        |
|                                                                | Subtotal:         |            |         |            | 533.32 |
|                                                                | H - HST           |            |         |            |        |
|                                                                | HST               |            |         |            | 69.32  |
| Thank you for your business / Merci de faire affaire avec nous |                   |            |         |            |        |

DAS  
38  
2-89

|                  |                  |                      |              |        |
|------------------|------------------|----------------------|--------------|--------|
| Shipped By:      | Tracking Number: | HST: 825007651RT0001 | Total Amount | 602.64 |
| Comment: WO21751 | SP 18-01-10      |                      | Amount Paid  | 0.00   |
| Sold By:         |                  |                      | Amount Owing | 602.64 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>*****CERTIFICATE of CONFORMITY*****</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |
| <b>Customer:</b> Studio SL2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                    |
| <b>Purchase Order No:</b> 038736                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Packing Slip No:</b> W0#21751   |
| <b>Part No:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Serial No:</b>                  |
| <b>Description:</b> D3108-3P, D3108-5P, D4384-1P                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Quantity:</b> 10, 10, 10, 10    |
| <b>Certification:</b><br>We hereby certify that:<br>1. The above listed items were manufactured, repaired and/or inspected in accordance with applicable drawings and/or specifications;<br>2. All work was accomplished in accordance with the Dart Aerospace Purchase Order;<br>3. Results of all inspections, chemical or physical tests, as well as other evidence, which shows the acceptability of raw materials, parts and/or assembly components are on file and available for inspection at any time. |                                    |
| <b>Authority:</b> 3M / 1 year shelf life.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                    |
| <b>APPROVAL:</b> Valerie Young                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Signature:</b> [Signature]      |
| <b>DATE:</b> Jan 09.18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Title:</b> office administrator |



## IJ35-10 IJ35-20

**Quick Links**

[3M Graphics Warranties](#)  
[Technical Information Selector](#)  
[Safety Data Sheets \(SDS\)](#)  
[Flammability \(ASTM E84 Reports\)](#)  
[Videos](#)

### Product Description

- For Solvent, Eco-Solvent UV and Latex Inkjet Printing and Screen Printing
- 3.2-mil vinyl film

### Product Features

- Available in gloss and matte finishes
- Pressure-sensitive adhesive
- Permanent
- Expected Performance Life of 5 years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)

### Recommended Types of Graphics and End Uses

- Short to long-term, indoor and outdoor promotional graphics
- Signs, trade show and point-of-purchase displays
- Exhibits and architectural applications

### Graphic Protection

Graphic protection can improve the appearance, performance and durability of your graphic. Always use only the graphic protection options recommended in this Bulletin for this film.

- [3M™ Scotchcal™ Gloss Overlamine 8508](#)
- [3M™ Scotchcal™ Luster Overlamine 8509](#)
- [3M™ Scotchcal™ Matte Overlamine 8510](#)

### Characteristics

These are typical values for unprocessed product. Processing may change the values.

### Physical Characteristics

| Characteristic | Value                                                                                                                                          |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Material       | Vinyl                                                                                                                                          |
| Film Color     | White, opaque                                                                                                                                  |
| Thickness      | <b>Without adhesive:</b> 3.25 mil (0.081 mm)<br><b>With adhesive:</b> 4.0 mil (0.102 mm)                                                       |
| Adhesive       | Pressure sensitive                                                                                                                             |
| Adhesive Color | Gray                                                                                                                                           |
| Liner          | Polycoated paper                                                                                                                               |
| Flammability   | ASTM E84 reports: <a href="#">IJ35-10</a> and <a href="#">IJ35-20</a> , or go to the On-line Product Catalog at <a href="#">3Mgraphics.com</a> |

## Application Characteristics

| Characteristic                              | Value                                                                                                                                                                                                                                           |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Finished Graphic Application Recommendation | <b>Surface type:</b> Smooth, flat and simple curved surfaces<br><b>Substrate type:</b> Metal, rigid plastic and painted surfaces<br><b>Application temperature:</b> 40° – 100°F (4° – 38°C) air and substrate<br><b>Application method:</b> Dry |
| Temperature Range After Application         | -59 °F to +192 °F (-50 °C to +90 °C) (not for extended periods of time at the extremes)                                                                                                                                                         |
| Graphic Removal                             | Permanent                                                                                                                                                                                                                                       |

## Warranty Information

### Warranty Coverage Overview

The warranty coverage for eligible graphics is based on the user both reading and following all applicable and current 3M Graphics Product and Instruction Bulletins. The warranty period for eligible graphics is as stated in the 3M Graphics Warranties Matrices at the time that the film was purchased. Information found at [3MGraphics.com/warranties](http://3MGraphics.com/warranties) includes:

- [3M Graphics Warranties Bulletin](#)
  - This bulletin contains information on limitations and exceptions, and warranty period reductions for 3M Graphics Warranties. The warranty period may be reduced and stipulations may apply for certain constructions, applications, and graphic exposures as covered in this Bulletin.
- [3M Graphics Warranties Selector](#)
  - Use this selector to search for your vertical warranty period by product type, ink type, film name, and/or ink/printer platform.
- [U.S. Desert Southwest Region Map](#)
  - Use this map of hot, arid desert areas to determine if you are subject to reduced warranted durabilities.

The warranties set forth in this Bulletin are made in lieu of all other express or implied warranties, including any implied warranty of merchantability, fitness for a particular purpose, or arising out of a course of dealing, custom, or usage of trade.

### 3M Basic Product Warranty

3M Graphics Products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in its applicable 3M Graphics Product Bulletin and as further set forth in the [3M Graphics Warranties Bulletin](#).

### Limited Remedy

The limited remedy applicable to each warranty is addressed in the 3M Graphics Warranties Bulletin found at [3MGraphics.com/warranties](http://3MGraphics.com/warranties).

### Limitation of Liability

Except where prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED IN THE 3M GRAPHICS WARRANTIES BULLETIN), INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LABOR, NON-3M MATERIAL CHARGES, LOSS OF PROFITS, REVENUE, BUSINESS, OPPORTUNITY, OR GOODWILL) RESULTING FROM OR IN ANY WAY RELATED TO 3M'S GRAPHICS PRODUCTS, SERVICES, or THIS BULLETIN. This limitation of liability applies regardless of the legal or equitable theory under which such losses or damages are sought.

### Additional Limitations

See the 3M Graphics Warranties Bulletin at [3MGraphics.com/warranties](http://3MGraphics.com/warranties), for terms, additional limitations of your warranty, if any, information on reduced warranties for different exposures, and limitations of liability.



## Factors that Affect Graphic Performance Life

The actual performance life of a graphic is affected by:

- the combinations of graphics materials used.
- complete ink drying or curing.
- selection, condition and preparation of the substrate.
- surface texture.
- application methods.
- angle and direction of sun exposure.
- environmental conditions.
- cleaning or maintenance methods.

## Graphics Manufacturing

### CAUTION

Before using any equipment, always read the manufacturer's instructions for safe operation.

## Inkjet Printing

Always read and follow the ink manufacturer's written instructions on usage.

- **Sheeted film:** When used on a flat-bed inkjet printer, sheeted film may produce printing defects.
- **Ink limiting:** The recommended maximum ink limit is 250%.
- **If sheeted or stacked graphics will be stored:** If you plan to store sheeted and stacked finished graphics for an extended period of times, leave an unprinted margin (about 1/4 inch) to allow for possible shrinkage before trimming the graphic.

Do not exceed the recommended total ink coverage for the ink series used on this film. Having too high a total physical ink amount on the film results in media characteristic changes, incomplete drying, overlamine lifting, and/or poor graphic performance.

## Completely Dry Graphics

### IMPORTANT NOTE

Incomplete drying or curing can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under any 3M Graphic Warranty.

See the ink's 3M Product and Instruction Bulletin for more details.

## Screen Printing

Formulations and processing conditions can affect ink durability. Refer to the Product and Instruction Bulletins for your ink for limitations and proper usage.

## Cutting

See [3M Instruction Bulletin 4.1](#) for Sheeting, Scoring and Film Cutting details.

## Graphic Protection

Graphic protection may improve the appearance, performance and durability of the graphic. Click on the graphic protection options listed in Product Bulletin or see the [3M Graphics Market Product Catalog](#), for more information.

### IMPORTANT NOTE

During installation, scratches may occur on films without graphic protection.

## Application and Installation

In addition to other 3M Bulletins specified in this document, the following Bulletins provide details that you may need to successfully apply a graphic.

- [3M Instruction Bulletin 4.22](#), Hot and Cold Roll Lamination for 3M Overlaminates.
- [3M Instruction Bulletin 5.1](#) Select and Prepare Substrates for Graphic Application
- [3M Instruction Bulletin 5.19](#), Lamination, Application & Maintenance of Floor Graphics. Complete the Surface Preparation procedure found in this Instruction Bulletin prior to applying a graphic to a surface.
- [3M Instruction Bulletin 5.5](#) Application, General Procedures for Interior and Exterior Dry Application
- [3M Instruction Bulletin 6.5](#) Storage, Handling, Maintenance, and Removal of Films and Sheetings

## Pressure-sensitive Adhesive

This film has a pressure-sensitive adhesive. It bonds to the surface even with light pressure and cannot be repositioned.

## Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). See [3M Instruction Bulletin 6.5](#) for details.

## Shelf Life, Storage and Shipping

### Shelf Life

The shelf life is **never more than 2 years** from the date of manufacture on the original box.

If you process the film, the shelf life is changed to **1 year** from the processing date, but not later than the 2 year maximum from the manufacturing date.

### Storage Conditions

- 90 °F (32 °C) maximum
- Out of sunlight
- Clean, dry area
- Original container
- Bring the film to print room temperature before using

### Shipping Finished Graphics

Flat, or rolled printed side out on 5 inch (13 cm) or larger core. This helps prevent the liner, if used, from popping off.

## Health and Safety

### CAUTION

When handling any chemical products, read the manufacturer's container labels and the Safety Data Sheets (SDS) for important health, safety and environmental information. To obtain SDS sheets for 3M products go to [3M.com/SDS](http://3M.com/SDS), or by mail or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturer's instructions for safe operation.



## Bulletin Change Summary

For the most current 3M Technical Information available to successfully use this product, please view this Bulletin electronically and click on the blue underlined links to view the relevant documents.

### Release J, NOV-2016:

- Updated Thickness. See "Physical Characteristics" on page 1.

3M Commercial  
Solutions  
3M Center  
Building 220-12E-04  
St. Paul, MN 55144-1000  
Phone 1-888-328-3908  
Web 3M.com/Graphics

3M Canada  
PO Box 5757  
London, ON N6A 4T1  
1-800-265-1840  
Fax 519-452-6245

3M México S.A. de C.V.  
Av. Santa Fe No. 55  
Col. Santa Fe, Del. Alvaro  
Obregón  
México D.F. 01210  
General 5255-5270-0400  
Fax 5255-5270-2277

3M Puerto Rico, Inc.  
350 Chardon Avenue  
Suite 1100  
San Juan, PR 00918  
General 787-620-3000  
Fax 787-620-3018

3M and Scotchcal are trademarks of 3M Company. All other trademarks are the property of their respective owners.



**DART**  
AEROSPACE  
**S030855**



**Decal**

**PART NO: D3108 - 1**  
**Revision:**  
**Operation: Purchasing**  
**Change No:**

**Dart Aerospace Ltd.**

1270 Aberdeen Street  
Hawkesbury, ON K64 1K7  
CANADA

TEL.: 1 613 632-5200  
Email: [sales@dartaero.com](mailto:sales@dartaero.com)  
[www.dartaerospace.com](http://www.dartaerospace.com)

**Mfg Date: 01/10/18**

**Job No: 169977**